

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A mixture for etching a dielectric material in a layered substrate, the mixture comprising:

a fluorocarbon; and

a fluorine-containing oxidizer selected from the group consisting of a hypofluorite, a fluoroperoxide, a fluorotrioxide, and combinations thereof, wherein the mixture has a ratio by volume of the fluorine-containing oxidizer to the fluorocarbon from 0.1:1 to 20:1, wherein the fluoroperoxide is selected from the group consisting of difluoro-peroxide, fluoro-trifluoromethyl-peroxide, bis-trifluoromethyl peroxide, pentafluoroethyl-trifluoromethyl-peroxide, bis-pentafluoroethyl-peroxide, difluorodioxirane, bis-trifluoromethyl-peroxydicarbonate, fluoroformyl trifluoromethyl peroxide, bis-fluoroformyl-peroxide, and combinations thereof.

2. (Original) The mixture of claim 1 further comprising an inert diluent gas.

3. (Original) The mixture of claim 2 wherein the inert diluent gas is at least one selected from the group consisting of argon, neon, xenon, helium, nitrogen, krypton, and combinations thereof.

4. (Original) The mixture of claim 2 wherein the mixture comprises from 0.1 to 99 % by volume of the inert diluent gas.

5. (Original) The mixture of claim 1 wherein the fluorocarbon is at least one selected from the group consisting of perfluorocarbon, hydrofluorocarbon, oxyhydrofluorocarbon, oxyfluorocarbon, and combinations thereof.

6. (Original) The mixture of claim 5 wherein the fluorocarbon is at least one perfluorocarbon selected from the group consisting of tetrafluoromethane, trifluoromethane, octafluorocyclobutane, octafluorocyclopentene, hexafluoro-1,3-butadiene, and combinations thereof.

7. (Original) The mixture of claim 6 wherein the perfluorocarbon is hexafluoro-1,3-butadiene.

8. (Original) The mixture of claim 5 wherein the fluorocarbon is at least one hydrofluorocarbon.

9. (Original) The mixture of claim 9 wherein the fluorocarbon is at least one oxyhydrofluorocarbon.

10. (Original) The mixture of claim 5 wherein the oxyhydrofluorocarbon is at least one selected from the group consisting of perfluorocyclopentene oxide, hexafluorocyclobutanone, hexafluorodihydrofuran, hexafluorobutadiene epoxide, tetrafluorocyclobutanedione perfluorotetrahydrofuran (C_4F_8O), hexafluoropropylene oxide (C_3F_6O), perfluoromethylvinyl ether (C_3F_6O), and combinations thereof.

11. (Original) The mixture of claim 1 wherein the fluorine-containing oxidizer is a hypofluorite having the formula $C_xH_yF_z(OF)_nO_m$ wherein x is a number ranging from 0 to 8, y is a number ranging from 0 to 17, z is a number ranging from 0 to 17, n is 1 or 2, and m is 0, 1, or 2.

12. (Canceled)

13. (Original) The mixture of claim 1 wherein the fluorine-containing oxidizer is a fluorotrioxide selected from the group consisting of bis-trifluoromethyl-trioxide, fluoro-trifluoromethyl-trioxide, fluoroformyl trifluoromethyl-trioxide, and combinations thereof.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Original) The mixture of claim 1 wherein the dielectric material is at least one selected from the group consisting of silicon, silicon-containing compositions, silicon dioxide (SiO_2), undoped silicon glass (USG), doped silica glass, silicon and nitrogen containing materials, organosilicate glass (OSG), organofluoro-silicate glass (OFSG), low dielectric constant materials, polymeric materials, porous low dielectric constant materials, and combinations thereof.

18. (Original) A mixture for etching a dielectric material in a layered substrate comprising: a fluorocarbon and a hypofluorite.

19. (Original) A mixture for etching a dielectric material in a layered substrate comprising: a fluorocarbon and a fluoroperoxide.

20. (Original) A mixture for etching a dielectric material in a layered substrate comprising: a fluorocarbon and a fluorotrioxide.

21 to 26. (Canceled)